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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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06/20/2000

Yochai Konig

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12/03/2003

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EXAMINER

BURGESS, BARBARA N

ART UNIT

PAPER NUMBER

2157

DATE MAILED: 12/03/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/597,975

Applicant(s)

KONIG ET AL.

Examiner

Barbara N Burgess

Art Unit

2157

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-62 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

This Office Action is in response to amendments filed September 8, 2003. Claims 1-62 are presented for further examination.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-62 are rejected under 35 U.S.C. 102(e) as being anticipated by Breese et al. (hereinafter "Breese", 6,006,218).

As per claims 1 and 32, Breese discloses a computer-implemented method for providing automatic, personalized information services to a user u, the method comprising:

- Transparently monitoring user interactions with data while the user is engaged in normal use of a computer (column 5, lines 25-38);

Art Unit: 2157

- Updating user-specific data files, wherein the user-specific data files comprise the monitored user interactions with the data and a set of documents associated with the user (column 8, lines 33-36, 44-46);
- Estimating parameters of a learning machine, wherein the parameters define a User Model specific to the user and wherein the parameters are estimated in part from the user-specific data files (column 4 lines 62-67, column 5, lines 1-5, 20-33, column 8, lines 20-26);
- Analyzing a document  $d$  to identify properties of the document (column 8, lines 15-26);
- Estimating a probability  $P(u/d)$  that the document  $d$  is of interest to the user  $u$ , wherein the the probability  $P(u/d)$  is estimated by applying the identified properties of the document to the learning machine having the parameters defined by the User Model (column 6, lines 38-43, column 7, lines 1-10, 31-36, column 9, lines 11-15, 51-55);
- Using the estimated probability to provide automatic, personalized information services to the user (column 16, lines 34-42).

As per claims 2 and 33, Breese discloses wherein the user-specific data files include documents of interest to the user  $u$  and documents that are not of interest to the user  $u$ , and wherein estimating the parameters comprises distinct treatment of the documents of interest and the documents that are not of interest (column 12, lines 44-55).

Art Unit: 2157

As per claims 3 and 34, Breese discloses wherein analyzing the document d provides for the analysis of documents having multiple distinct media types (column 8, lines 15-26)

As per claims 4 and 35, Breese discloses wherein transparently monitoring user interactions with data comprises monitoring multiple distinct modes of user interaction with network data (column 5, lines 25-38).

As per claims 5 and 36, Breese discloses wherein the multiple distinct modes of user interaction comprise a mode selected from the group consisting of a network searching mode, a network navigation mode, a network browsing mode, an email reading mode, and email writing mode, a document writing mode, a viewing "pushed" information mode, a finding expert advice mode, and a product purchasing mode (column 5, lines 25-38).

As per claims 6 and 37, Breese discloses crawling network documents, wherein the crawling comprises parsing crawled documents for links, calculating probable user interest in the parsed links using the learning machine, and preferentially following links likely to be of interest to the user (column 9, lines 51-67, column 10, lines 1-27, 38-55).

Art Unit: 2157

As per claims 7 and 38, Breese discloses wherein the identified properties of the document  $d$  comprise a user  $u$ -independent property selected from the group consisting of:

- A probability  $P(t|d)$  that the document  $d$  is of interest to users interested in a topic  $t$  (column 6, lines 38-45);
- A topic classifier discrete probability distribution  $P(t/d)$  (column 6, lines 38-45);
- A product model discrete probability distribution  $P(p/d)$  (column 6, lines 38-45);
- Product feature values extracted from the document  $d$  (column 9, lines 50-67, column 10, lines 1-20);
- An author of the document  $d$  (column 9, lines 50-67, column 10, lines 1-20);
- An age of the document  $d$  (column 9, lines 50-67, column 10, lines 1-20);
- A list of documents linked to the document  $d$  (column 9, lines 50-67, column 10, lines 1-20);
- A language of the document  $d$  (column 9, lines 50-67, column 10, lines 1-20);
- A number of users who have accessed the document  $d$  (column 11, lines 1-30);
- A number of users who have saved the document  $d$  in a favorite document list (column 11, lines 1-30);
- A list of users previously interested in the document  $d$  (column 11, lines 1-30).

As per claims 8 and 39, Breese discloses wherein the parameters of the learning machine define a user  $u$ -dependent function selected from the group consisting of:

Art Unit: 2157

- A user topic probability distribution  $P(t/u)$  representing interests of the user  $u$  in various topics  $t$  (column 6, lines 38-45);
- A user product probability distribution  $P(p/u)$  representing interests of the user  $u$  in various products  $p$  (column 6, lines 38-45);
- A user product feature probability distribution  $P(F/u, p)$  representing interests of the user  $u$  in various features  $f$  of each of the various products  $p$  (column 6, lines 38-45, column 9, lines 50-67, column 10, lines 1-20);
- A website probability distribution  $P(s/u)$  representing interests of the user  $u$  in various websites  $s$  (column 8, lines 1-27);
- A cluster probability distribution  $P(c(u)/u)$  representing similarity of the user  $u$  to users in various clusters  $c(u)$  (column 9, lines 25-40);
- A phrase model probability distribution  $P(w/u)$  representing interests of the user  $u$  in various phrases  $w$  (column 9, lines 25-40);
- An information theory based measure  $I(lw; lu)$  representing mutual information between various phrases  $w$  and the user  $u$  (column 9, lines 25-40);
- An information theory based measure  $I(lt; lu)$  representing mutual information between various topics  $t$  and the user  $u$  (column 6, lines 38-45);
- An information theory based measure  $I(ls; lu)$  representing mutual information between various websites  $s$  and the user  $u$  (column 8, lines 1-27);
- An information theory based measure  $I(lp; lu)$  representing mutual information between various products  $p$  and the user  $u$  (column 8, lines 1-27);

Art Unit: 2157

- An information theory based measure  $I(f; u)$  representing mutual information between various features  $f$  of each of the various products  $p$  and the user  $u$  (column 8, lines 1-27).

As per claims 9 and 40, Breese discloses wherein the parameters of the learning machine define:

- A user product probability distribution  $P(p/u)$  representing interests of the user  $u$  in various products  $p$  (column 8, lines 1-27);
- A user product feature probability distribution  $P(f/u, p)$  representing interests of the user  $u$  in various features  $f$  of each of the various products  $p$  (column 8, lines 1-27);
- Estimating a probability  $P(u/d, \text{product described}=p)$  that a document  $d$  that describes a product  $p$  is of interest to the user  $u$ , wherein the probability is estimated in part from the user product probability distribution and the user product feature probability distribution (column 8, lines 1-27).

As per claims 10 and 41, Breese discloses recommending products to the user based on the probability  $P(u/d, \text{product described}=p)$  (column 6, lines 38-45).

As per claims 11 and 42, Breese discloses estimating a posterior probability  $P(u/d, q)$  that the document  $d$  is of interest to the user  $u$ , given a query  $q$  submitted by the user (column 8, lines 44-67).



Art Unit: 2157

As per claims 12 and 43, Breese discloses wherein estimating the posterior probability comprises estimating a probability  $P(q/d, u)$  that the query  $q$  is expressed by the user  $u$  with an information need in the document  $d$  (column 8, lines 44-67).

As per claims 13 and 44, Breese discloses applying the identified properties of the document  $d$  to a learning machine having product parameters characterizing a product  $p$  to estimate a probability  $P(p/d)$  that the document  $d$  refers to the product  $p$  (column 6, lines 38-45).

As per claims 14 and 45, Breese discloses updating the product parameters based on the identified properties of the document  $d$  and the estimated probability  $P(p/d)$  (column 8, lines 33-36, 44-46).

As per claims 15 and 46, Breese discloses initializing the product parameters based on a set of documents associated with the product  $p$  (column 8, lines 15-50).

As per claims 16 and 47, Breese discloses clustering multiple users into clusters of similar users, wherein the clustering comprises calculating distances between User Models, and selecting similar users based on the calculated distances between User Models (column 9, lines 25-40).

Art Unit: 2157

As per claims 17 and 48, discloses calculating relative entropy values between User Models of multiple users, and clustering together users based on the calculated relative entropy values (column 9, lines 25-40).

As per claims 18 and 49, Breese discloses wherein the parameters defining the User Model comprise calculated distances between the User Model and User Models of users similar to the user (column 11, columns 13-14).

As per claim 19 and 50, Breese discloses selecting in a group of users an expert user in an area expertise, wherein selecting the expert user comprises finding an expert User Model among User Models of the group of users, such that the expert User Model indicates a strong interest of the expert user in a document associated with the area of expertise (column 9, lines 20-50).

As per claim 20 and 51, Breese discloses parsing the document  $d$  for hyperlinks, and separately estimating for each of the hyperlinks a probability that the hyperlink is of interest to the user  $u$  (column 9, lines 51-67, column 10, lines 1-27, 38-55).

As per claims 21 and 52, Breese discloses sending to a third party web server user interest information derived from the User Model, whereby the third party web server may customize its interaction with the user (column 17, lines 6-25).

As per claims 22 and 53, Breese discloses wherein the monitored user interactions include a sequence of interaction times (column 9, lines 63-67).

As per claims 23 and 54, Breese discloses initializing the User Model using information selected from the group consisting of a set of documents provided by the user, a web browser history file associated with the user, a web browser bookmarks file associated with the user, ratings by the user of a set of documents, and previous product purchases made by the user (column 5, lines 25-38).

As per claims 24 and 55, Breese discloses modifying the User Model based on User Model modification requests provided by the user (column 8, lines 15-60).

As per claims 25 and 56, Breese discloses providing to the user a score for a document identified by the user, wherein the score is derived from the estimated probability (column 12, lines 49-55, column 13, lines 1-5).

As per claims 26 and 57, Breese discloses providing to the user a 3D map of a hyperlinked document collection, wherein the 3D map indicates a user interest in each document (column 5, lines 25-38).

As per claims 27 and 58, Breese discloses temporarily using a User Model that is built from a set of predetermined parameters of a profile selected by the user (column 8, lines 15-60).

As per claims 28 and 59, Breese discloses initializing the User Model by selecting a set of predetermined parameters of a prototype user selected by the user (column 8, lines 15-60).

As per claims 29 and 60, Breese discloses updating the predetermined parameters of the prototype user based on actions of users similar to the prototype user (column 8, lines 33-36, 44-46).

As per claims 30 and 61, Breese discloses identifying a set of users interest in the document d (column 16, lines 34-42).

As per claims 31 and 62, Breese discloses calculating a range of interests in the document d for the identified set of users (column 16, lines 34-42).

### ***Response to Arguments***

**The Office notes the following arguments:**

Art Unit: 2157

- (a) The important difference between the knowledge probability disclosed by Breese et al. and the probability that a document is of interest to a user in the current application appears to have been overlooked in the Office Action.
- (b) The user's information retrieval request of Breese et al. is not a User Model and the estimate of the value to the user of a reviewing the entry of Breese et al. is not a probability and is too vague to be considered a User Model.
- (c) The cited section of Breese et al. do not discuss any analysis of documents and are irrelevant to the claim element.
- (d) The parameters being estimated in the claim have nothing to do with the probability that the user knows of any specific items.
- (e) The applicant asserts that the cited passages do not specify nor imply that the user is engaged in normal use of the computer, nor that the monitoring is transparent.
- (f) Breese et al. Refer only to knowledge probability, not the probability that the documents are of interest to the user.
- (g) Breese does not disclose any analyzing of documents; hence these claims are novel and nonobvious.
- (h) Breese does not discuss nor suggest products. Therefore, Breese cannot anticipate, nor make obvious claims that include limitations to products.
- (i) Breese discusses neither clusters nor entropy values. Therefore, Breese does not anticipate nor make obvious claims referencing this.
- (j) Breese does not discuss calculated distances. Hence, Breese does not anticipate nor make obvious these claims.

- (k) Breese do not discuss the selection of an expert user, hence these claim are not anticipated nor made obvious by Breese.
- (l) Breese does not disclose the parsing of document for hyperlinks.
- (m) Breese does not disclose how long the user's interaction time is.
- (n) Breese does not disclose User Model modification requests.
- (o) Breese does not disclose the use of parameters of a prototype user that is selected by the user.

3. Applicant's arguments filed have been fully considered but they are not persuasive.

**In response to:**

(a), (d), (f), Breese does indeed disclose probability that a document is of interest to the user. This is done based on whether the user already knows of a specific document. If the document is already known to the user, it may then be thought of as unwanted or not useful which merely distracts the user from more useful material and/or wastes the user's time. "The list of recommendations generated using a collaborative filter can be, e.g., a list of television shows, songs, World Wide Web sites, etc. that may be of interest to the user. In accordance with the present invention, the value of individual recommendations, in a list of recommendations, is adjusted, e.g., corrected, based on the estimated probability that the user already knows a particular item being recommended to the user. By performing a re-ranking operation in this manner, the

Art Unit: 2157

present invention achieves a more meaningful ranking of recommendations than is the achieved using prior art approaches. Furthermore, the noise problem and the risk of information overload associated with including known items in the results of an information retrieval request, such as a collaborative filtering operation, is reduced. The present invention can be used when making recommendations to a user, e.g., in response to a user initiated information request, or after monitoring a user's actions for a period of time" (column 3, lines 8-26). However, not only does Breese disclose the probability that a document is of interest to a user, it takes into consideration whether the user knows of the document so that the user has new and useful documents and not stale, outdated, not useful information. Therefore, Breese et al. definitely discloses the probability that the document is of interest to the user.

(b) Breese clearly discloses a User Model specific to the user. Breese discloses a database that has information about the user and the user's interests (column 4 lines 62-67, column 5, lines 1-5, 20-33, column 8, lines 20-26).

(c), (g), (h), (k)-(l), (o) Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Art Unit: 2157

(e) Breese specifically discloses monitoring a user's actions while accessing Internet sites (column 3, lines 23-30). Therefore, Breese undoubtedly teaches the user in normal use and monitoring being transparent to the user.

(i)-(j), (n) Breese discloses a poll on how others view certain documents in respect to the actual user (column 5, lines 51-67, column 6, lines 1-10, 38-46). Therefore, Breese plainly discloses calculated distances between the User Model and the User Models of other users.

(m) Breese plainly discloses the amount of time the user interacts with a document (column 5, lines 20-36, column 8, lines 4-8, 21-25, column 9, lines 65-67).

### ***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.



Art Unit: 2157

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara N Burgess whose telephone number is (703) 305-3366. The examiner can normally be reached on M-F (8:00am-4:00pm).

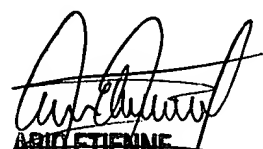
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Ettinene can be reached on (703) 308-7562. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Barbara N Burgess  
Examiner  
Art Unit 2157

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November 26, 2003

  
ARIO ETIENNE  
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TECHNOLOGY CENTER 2100